

### **Amendments to the Claims**

This listing of claims will replace all prior versions, and listings, of claims in the application:

#### **Listing of the Claims**

1. (currently amended) An Orthogonal Frequency Division Multiplexing (OFDM) receiver that is adapted to receive OFDM signals, the OFDM receiver comprising:
  - a shared buffer that stores data corresponding to the OFDM signals;
  - ~~a processor that is adapted to receive data from the shared buffer, perform computations on the data and return data to the shared buffer;~~
  - an equalizer tap initialization module that is adapted to exchange data with the shared buffer;
  - a fine carrier estimation module that is adapted to exchange data with the shared buffer;
  - a fine frame synchronization module that is adapted to exchange data with the shared buffer;
  - an equalizer module adapted to receive data from the shared buffer and equalize the data; and
  - a receiver controller that ~~controls access to the shared buffer by the processor and~~ controls the transfer of data from the shared buffer to the equalizer module and allows the equalizer tap initialization module, the fine carrier estimation module and the fine frame synchronization module to access the shared buffer responsive to receipt of at least a portion of a preamble by the OFDM receiver.
2. (previously presented) The OFDM receiver of claim 1, comprising:
  - a pilot frame tracking module that is adapted to move an FFT window location by changing an index pointer to the shared buffer.
3. (previously presented) The OFDM receiver of claim 1, comprising:

a pilot carrier tracking module adapted to provide pilot carrier tracking data to the shared buffer; and

a fine carrier estimation module that is adapted to access the shared buffer to obtain the pilot carrier tracking data.

4. (previously presented) The OFDM receiver of claim 1, comprising:  
an equalizer tap initialization module that is adapted to exchange data with the shared buffer; and  
a least mean squares (LMS) adaptation engine that is adapted to provide input to the equalizer tap initialization module.

5. (previously presented) The OFDM receiver of claim 4, wherein the equalizer tap initialization module is adapted to reuse output from the LMS adaptation engine to perform a recursive division algorithm.

6. (previously presented) The OFDM receiver of claim 1, comprising:  
a least mean squares (LMS) adaptation engine that is adapted to provide input to the equalizer module; and  
wherein the equalizer module is adapted to reuse the data provided by the LMS adaptation engine to compute a least mean squares tap update value.

7. (previously presented) The OFDM receiver of claim 1, comprising:  
a fine frame synchronization module adapted to exchange data with the shared buffer;  
and  
a least mean squares (LMS) adaptation engine that is adapted to provide input to the fine frame synchronization module.

8. (previously presented) The OFDM receiver of claim 7, wherein the fine frame synchronization module is adapted to reuse output from the LMS adaptation engine to perform a recursive division algorithm.

9. (previously presented) The OFDM receiver of claim 1, comprising:  
a coarse carrier estimation and frame synchronization module that is adapted to exchange data with the shared buffer; and  
wherein the receiver controller is adapted to allow the coarse carrier estimation and frame synchronization module to access the shared buffer responsive to receipt of at least a portion of a preamble by the OFDM receiver.

10. (canceled)

11. (previously presented) The OFDM receiver of claim 1, comprising:  
a pilot carrier tracking module that is adapted to receive data from the equalizer module;  
a pilot frame tracking module that is adapted to provide data to the shared buffer; and  
wherein the receiver controller is adapted to activate the equalizer module, the pilot carrier tracking module and the pilot frame tracking module responsive to the receipt of at least a portion of an OFDM signal by the OFDM receiver.

12. (previously presented) The OFDM receiver of claim 1, wherein the receiver controller is a state machine.

13. (currently amended) A device, comprising:  
a shared buffer that stores data corresponding to signals;  
~~a processor that is adapted to receive data from the shared buffer, perform computations on the data and return data to the shared buffer;~~

an equalizer tap initialization module that is adapted to exchange data with the shared buffer;

a fine carrier estimation module that is adapted to exchange data with the shared buffer;

a fine frame synchronization module that is adapted to exchange data with the shared buffer;

an equalizer module adapted to receive data from the shared buffer and equalize the data; and

a device controller that ~~controls access to the shared buffer by the processor and~~ controls the transfer of data from the shared buffer to the equalizer module and allows the equalizer tap initialization module, the fine carrier estimation module and the fine frame synchronization module to access the shared buffer responsive to receipt of at least a portion of a preamble signal.

14. (previously presented) The device of claim 13, comprising:

a pilot frame tracking module that is adapted to move an FFT window location by changing an index pointer to the shared buffer.

15. (previously presented) The device of claim 13, comprising:

a pilot carrier tracking module adapted to provide pilot carrier tracking data to the shared buffer; and

a fine carrier estimation module that is adapted to access the shared buffer to obtain the pilot carrier tracking data.

16. (previously presented) The device of claim 13, comprising:

an equalizer tap initialization module that is adapted to exchange data with the shared buffer; and

a least mean squares (LMS) adaptation engine that is adapted to provide input to the equalizer tap initialization module.

17. (previously presented) The device of claim 13, comprising:
  - a least mean squares (LMS) adaptation engine that is adapted to provide input to the equalizer module; and
  - wherein the equalizer module is adapted to reuse the data provided by the LMS adaptation engine to compute a least mean squares tap update value.
18. (previously presented) The device of claim 13, comprising:
  - a coarse carrier estimation and frame synchronization module that is adapted to exchange data with the shared buffer; and
  - wherein the device controller is adapted to allow the coarse carrier estimation and frame synchronization module to access the shared buffer responsive to receipt of at least a portion of a preamble signal.
19. (canceled)
20. (previously presented) The device of claim 13, comprising:
  - a pilot carrier tracking module that is adapted to receive data from the equalizer module;
  - a pilot frame tracking module that is adapted to provide data to the shared buffer; and
  - wherein the device controller is adapted to activate the equalizer module, the pilot carrier tracking module and the pilot frame tracking module responsive to the receipt of a signal by the device.